

REMARKS

This amendment is responsive to the non-Final Office Action of December 12, 2008. Reconsideration and allowance of claims 3-8 and 11-20 are requested.

The Office Action

Claims 1-4, 7, 9, 16, and 18 stand rejected under 35 U.S.C. § 103 over Lucassen (WO 02/057759) in view of Cook (WO 02/15786).

Claim 5 stands rejected under 35 U.S.C. § 103 over Lucassen in view of Chaiken (WO 00/01295).

Claim 6 stands rejected under 35 U.S.C. § 103 over Lucassen in view of Cook, further in view of Gao (IEEE 2001 Article).

Claims 8 and 9 stand rejected under 35 U.S.C. § 103 over Lucassen in view of Cook, further in view of Winchester (US 7,113,817).

Claims 11, 12, and 13 stand rejected under 35 U.S.C. § 103 over Lucassen in view of Cook, further in view of Couderc (US 2004/0239924).

Claim 14 stands rejected under 35 U.S.C. § 103 over Lucassen in view of Cook, further in view of Firbank (Am. Phys. Soc. Article).

Claim 15 stands rejected under 35 U.S.C. § 103 over Lucassen in view of Cook, further in view of Firbank, further yet in view of Vadapalli (Biotech Article).

Claim 17 stands rejected under 35 U.S.C. § 103 over Lucassen in view of Cook, further in view of Chance (US 6,526,309).

**The Claims Distinguish Patentably
Over the References of Record**

As the present application points out starting in the last paragraph of page 1, a problem encountered with the known prior art, such as Lucassen, when analyzing whole blood Raman spectra is that the signal is almost completely dependent on the amount of hemoglobin. The signal contribution of other analytes is limited to a few percent or less, and is therefore measured against a very large background signal, which strongly varies with oxygenation of the hemoglobin. Moreover, usually the analyte concentration values in the plasma are the parameter of interest, but Raman spectroscopy does not discriminate between intracellularly and

extracellularly located analytes. Under normal physiological circumstances, about 35-50% of the blood volume is taken up with red blood cells. Furthermore, when measuring the Raman spectrum of bulk samples, signal collection efficiency is effected by multiple light scattering by the red blood cells, resulting in a less well-defined measuring volume and by absorption and excitation of the Raman scattered light.

As stated in the first full paragraph of page 2, the present application provides an analysis apparatus and corresponding method which avoids the above-referenced problems, has a better signal-to-background ratio, and provides signals having a higher signal contribution of other analytes apart from the hemoglobin than previous methods and apparatus.

Claim 7 calls for the image processing unit to select areas in the image showing capillary vessels or vessel portions that include an amount of red blood cells below a predetermined cell amount. Cook, which the Examiner relies upon for this limitation, actually teaches against including an amount of red blood cells *below* a predetermined cell amount. By contrast, Cook looks to analyze the Raman spectra from vascular regions and treats the signal from regions with a low cell count as background (page 8, lines 21-25; page 24, lines 22-23; page 25, line 2; page 28, lines 28-29). Cook suggests that the image can be discarded if the diameter is less than 70 μm . He specifically states that larger vessels of 70 μm or greater provide a better estimate of the subject's hemoglobin.

Accordingly, it is submitted that Cook teaches against an apparatus as described in claim 7.

Dependent **claim 20** limits the cell amount to a haematocrit value of 0.35 or less. It is submitted that such a low haematocrit is contrary to the fair teachings of Cook, who is looking to optimize the amount of hemoglobin.

Dependent **claim 6** calls for the capillary vessels or vessel portions to have a diameter below 15 μm . By contrast, Cook discards regions with vessels of only 70 μm or less.

Accordingly, it is submitted that **claim 7 and claims 6, 8, 16, 17, and 20 dependent therefrom** distinguish patentably and unobviously over the references of record.

Claim 11 focuses on the embodiment of the present application which uses a sample holding system, such as that illustrated in Figure 5. Cook, upon whom the Examiner relies for blood vessel region selection, relates to *in vivo* analysis of blood.

Second, claim 11 calls for the capillary to have a diameter of 50 μm or less. By contrast, Cook suggests discarding values from blood vessels with a diameter of less than 70 μm (see, for example, page 28, lines 19-22).

Third, claim 11 calls for an amount of red blood cells in the blood in the capillary to below a predetermined amount. (Dependent claim 15 specifies that the predetermined amount is below haematocrit 0.35). By contrast, Cook wants to maximize the hemoglobin, and if the hemoglobin is low, Cook tells the reader to look for blood vessels with a larger diameter (see, for example, page 29, line 23 – page 30, line 2).

Accordingly, it is submitted that **claim 11 and claims 12-15 dependent therefrom** now distinguish patentably and unobviously over the references of record.

Claim 18 calls for selecting a target region in the upper dermis having red blood cells below a haematocrit value of 0.35. As discussed above, Cook teaches just the opposite, i.e., that one should maximize the hemoglobin in the test sample. The present inventors have determined that the analysis of plasma, cholesterol, and other results can be masked by too much hemoglobin. To cure this problem, the present application proposes a method which minimizes the hemoglobin in the sample. Cook not only does not recognize this problem or this solution to it, nor the advantages of the presently claimed method, instead Cook teaches that one should maximize the amount of hemoglobin, and if the amount of hemoglobin is too small, one should look to another location to make the analytical readings.

Claim 18 further calls for analyzing the scattered radiation from blood and capillaries having a diameter below 15 μm . Cook, by contrast, suggests discarding data from vessels below 70 μm .

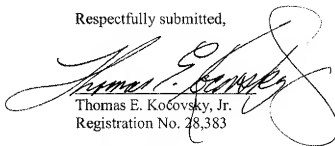
Accordingly, it is submitted that **claim 18 and claims 3-5 and 19 dependent therefrom** distinguish patentably and unobviously over the references of record.

CONCLUSION

For the reasons set forth above, it is submitted that claims 3-8 and 11-20 distinguish patentably over the references of record and meet all statutory requirements. An early allowance of all claims is requested.

In the event the Examiner considers personal contact advantageous to the disposition of this case, the Examiner is requested to telephone Thomas Kocovsky at 216.363.9000.

Respectfully submitted,

A large, stylized handwritten signature in black ink, which appears to read "Thomas E. Kocovsky, Jr.", is written over the typed name and registration number.

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